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COUNTRY REPORTED ON
GDR

DATE OF REPORT
10 Jun 58

SUBJECT Transmittal of Publication (Photocopy & microfilm) (GDR) (C)

REFERENCES

SUMMARY & Report DOWNGRADING DATA CANNOT BE PREDETERMINED

1. Transmitted herewith is an English language digest which summarized the S&T articles of interest contained in the following GDR publications, dtd Sept 57, in the field of Production Engineering:

   a. Fertigungstechnik
   b. Giessereitechnik
   c. Schweisstechnik

2. Data collected by ATLO Team attached 522 MI Bn.

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THAT POINT feed systems are advantageous also in aluminum pressure die casting, and that severe wear of the die material by the impact of the concentrated, high-pressure jet of liquid aluminum is not to be feared. The method saves material and finishing cost. 2 figures.
(GT 3. no.9. 198-199. September 1957. GDR)

Useful shop innovations and improvements

The following innovations and improvements originationg in shops and/or factories of the GDR are compiled and described in short under "Verbesserungsvorschläge", GT 7, no.9, 212-213:

a. Making SiC ingot molds of grindwheel scrap.
b. Core blowing method.
c. Determination of the sintering degree.
d. Toolholder with integral coolant spray system.
e. Sieve type alloying ladle saves nickel in gray iron foundries.

(GT 7. no.9. 212-213. September 1957. GDR)

Semi-automatic CO_2-shielded metal-arc welding

W.Gilde.- Only few of numerous papers recently published on the CO_2-shielded metal-arc process deal with the semi-automatic process in particular. Even these have limited value as the equipment described therein is not available in the GDR. The semi-automatic process is deemed to be of special importance due to the conditions prevailing in the GDR. Whereas in fully automatic welding the Unionmelt (submerged-arc) process is capable to meet most requirements, the semi-automatic Unionmelt process is not universally applicable. It is therefore necessary to develop equipment for semi-automatic CO_2 welding under use of components available, and to establish a process technology. The present status of such work is described. 16 figures.
(SCHW 7. no.9. 330-333. September 1957. Central Institute for Welding, Halle-Saale, GDR)

The influence of power source characteristics on CO_2-shielded metal-arc welding

H.-E.Weinschenk, G.Hirschfeld, and R.Nitzsche.- Automatic welding processes require that the arc length be maintained at a constant value. Any deviations affect the power source. Arc length variations may be caused by direct or indirect influences. With direct influences, wire feed speed is kept constant, the arc length fluctuation is momentary, and normal conditions are reestablished spontaneously. With indirect influences, feed speed is changed for the duration of the disturbance, and the power source assumed a new point of operation. The author compares the response to arc length variations of three welding converters having different characteristics. It is shown that power sources with raising characteristics (if possible of the controllable rate-of-rise type) are preferrable for fully automatic welding processes. 9 figures.
(SCHW 7. no.9. 344-348. September 1957. Central Institute for Welding, Halle-Saale, GDR)

Status of cold pressure welding

Dipl.-Ing.H.Jacob.- The author initially gives a definition of cold pressure welding and a survey of the literature on this subject. Clean metallic surfaces and a certain degree of deformation of the surfaces to be joined are essential for trouble-free cold pressure welds. For overlap welds of purest aluminum, pure aluminum, electrolytic copper, tin, lead, zinc, cadmium, chrome-nickel steel, and ingot iron the shearing strength-cross section relationship, the principal Ruge's characteristics, and the Sowter's figures of merit are given. The method for the joining of different materials is treated. Pressure butt welding process data are given for pule aluminum and electrolytic copper. The influences of deformation speed, oxide film regeneration, surface deformation and roughness, and of temperature on the strength of cold pressure welds are discussed. After the treatment of cold pressure butt welding experiences and the explanation of the influence of restrained wire ends, the treatise closes with the more remarkable interpretations of the process theory. 27 figures.
(FT 7. no.9. 393-399. September 1957. Research Institute for Metal Forming, Zwickau, GDR)

Surface treatment of gray, malleable, and steel castings by medium-frequency induction heating

Ing.G.Hoffmann.- The author describes the types of wear occurring on castings, and how such wear may be reduced. It is explained what prerequisites must be fulfilled by the material for effective induction hardening in the above categories of ferrous castings. Regarding the necessary equipment, the author refers to other publications. 20 figures.
(FT 7. no.9. 403-407. September 1957. Göllingen, GDR)

Selection of heat treatment and coordination with the manufacturing process

Ing.J.Mainka.- Heta treatment of metals is important for proper performance and prolonged service life of parts. Careful consideration must therefore be given to thermal treatment when planning when planning the technological processes for the manufacture of a given part. Close cooperation between the designer, the technologist, the materials tester, and the heat treating shop is essential for trouble-free and fluent production. The author treats the sequence of operations, the selection of heat treatment and its effects on such sequence, and finally the viewpoints governing the selection of materials. 1 table; 3 figures.
(FT 7. no.9. 407-410. September 1957. Karl-Marx-Stadt, GDR)

Liquid honing

F.Neuberger, L.Möckel, and L.Rötz.- Liquid honing has come into extensive use in the US during world war II, and is also known under the names of "wet blasting" or "vapor blasting". The process has not yet been introduced in the GDR. Experimental equipment has therefore been developed at the Research Institute for Metal Forming, Zwickau. By an evaluation of the respective literature, the authors initially treat the status reached in other countries. This is followed by a description of their own tests to apply the process to die manufacture. A suitable procedure is proposed, and the technical and economic advantages are indicated. 9 figures.
(FT 7. no.9. 413-416. September 1957. Zwickau, GDR)

Point feeding system also in alumnum pressure die casting

W.Rubisch.- Plastics working industry uses diecasting dies having but one centrally disposed feed of small diameter (point feed) for some time already. The advantages, particularly where the parts are large plates or cup-shaped forms, are described. The author reports on tests which have shown

Digest of GDR's Technical and Scientifical Periodicals

PRODUCTION ENGINEERING

This Digest covers the following periodicals:

Fertigungstechnik (FT)

Giessereitechnik (GT)

Schweisstechnik (SCHW)

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